

REMARKS

In view of the following remarks, reconsideration of the rejections and further examination are requested. Upon entry of this amendment, claim 1, 2 and 4 are amended, thus claims 1-4 remain pending with claim 1 being independent. No new matter has been added.

Rejections Under 35 U.S.C. §112, second paragraph

Claims 1-4 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner contends that claim 1 recites a grain size number but does not specify the standard.

Claim 1 has been amended to overcome this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 1-4 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohki (U.S. 2003/0123769) in view of Maeda et al. (JP 2002-115031).

Applicants traverse this rejection.

The cited prior art fails to disclose or render obvious each of the elements of independent claim 1. Claim 1 recites, among other things, a bearing including an inner ring, an outer ring, and a plurality of rolling elements, wherein at least one member of the inner ring, the outer ring, and the rolling elements is formed from steel alloyed with 0.3% to 5.0% by weight of Cr and 0.003% by weight or less of Ti, wherein Ti is present.

Ohki discloses a heat treated bearing formed from steel, which includes some of the same materials (although in different quantities) as recited in claim 1. However, as recognized by the Examiner, Ohki fails to disclose titanium. The Examiner suggests that titanium is expected to be either absent or present only in negligible amounts, since Ohki states that the balance of the composition is iron and that the amounts of other impurities do not exceed 0.1wt%. Therefore, the Examiner suggests, titanium would be expected to be present in an amount not exceeding 0.1wt%. *See Office Action Pg 5.*

Applicant respectfully disagrees. First, Applicants note that claim 1 recites that the steel is alloyed with ...0.003% by weight or less of Ti, wherein Ti is present. Therefore, at least some titanium must be present in the alloyed steel. Second, the cited prior art is completely silent regarding titanium. There is no disclosure or reason that titanium should be “expected” in any amount, let alone in the amount claimed. Neither steel nor iron inherently has titanium therein. The Examiner seems to have determined, with no basis in fact, that the steel or iron in Ohki has some amount of titanium. If the Examiner contends that steel or iron inherently has some amount of titanium, Applicants would appreciate evidence of such. Therefore, since claim 1 requires at least some titanium (in an amount of 0.003% by weight or less), and Ohki does not disclose *any* titanium included in the steel (or iron), nor provides any reason as to why titanium could be added to the steel (or iron), Applicants submit that independent claim 1 is allowable over the Ohki reference.

Furthermore, the Examiner cites Ohki as disclosing an overlapping range with respect to many of the claimed elements. The Examiner suggests that such overlapping ranges are sufficient to establish *prima facie* obviousness. See Pg 5 of the office action. The MPEP clearly states in §2144.05, that obviousness based on overlapping ranges can be rebutted by showing the criticality of the claimed range. The claimed range of at least one element, Chromium, is critical in the present application. As stated on Pg 6, lines 4-13 of the specification, “Chromium has a significant importance to the present invention: It is added to steel for the purposes of improving quenchability, ensuring the hardness caused by carbides, and extending steel life. The element has to be added in amounts of 0.3% or greater to obtain desired carbides. Thus, we determined the lower limit of the Cr content to be 0.3%. Conversely, chromium causes formation of clusters of carbides and thus reduces the rolling fatigue life when present in amounts greater than 5.0%. Thus, the upper limit of the Cr content was determined to be 5.0%.”

The present application claims a critical range of 0.3 – 5.0 wt% of chromium, while Ohki discloses 0-2.0 wt% of chromium. Ohki fails to understand the criticality of the lower limit of chromium and the results achievable through the upper limit recited in the present application.

Therefore, Applicants contend that the Ohki reference fails to disclose or render obvious

at least this element of independent claim 1

Moreover Maeda is cited as disclosing nickel. Maeda does not overcome the above discussed deficiencies of Ohki.

Therefore, Applicants contend that independent claim 1 and its dependent claims are allowable over the cited prior art.

In view of the foregoing amendments and remarks, all of the claims now pending in this application are believed to be in condition for allowance. Reconsideration and favorable action are respectfully solicited.

Should the Examiner believe there are any remaining issues that must be resolved before this application can be allowed, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Chikara OHKI et al.

By: 

Jeffrey J. Howell

Registration No. 46,402

Attorney for Applicants

JJH/DMO/kh
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
December 29, 2008